Confirmation No.: 1129 Filed: July 1, 1999

For: PROCESS VARIABLE GENERALIZED GRAPHICAL DEVICE DISPLAY AND METHODS REGARDING

SAME

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a gauge axis

a first pair of high and low limit elements representative of engineering hard high and low limit values for the corresponding process variable and a second pair of high and low limit elements representative of operator set high and low limit values for the corresponding process variable, where the first and second pair of high and low limit elements are displayed on the gauge axis; and

a graphical shape displayed along the gauge axis representative of a value of the corresponding process variable relative to process limit values that provides real-time process information to a user for the process, and further wherein each of the plurality of graphical devices is displayed in proximity to one of the manipulated and controlled variables.

41.(New) The graphical user display of claim 40, wherein the display providing the manipulated variables and controlled variables comprises a matrix display having the manipulated variables displayed along a first axis thereof and the controlled variables displayed along a second axis thereof.

42.(New) The graphical user display of claim 40, wherein at least one graphical device displayed is selectable for navigation to more detail information for a process variable corresponding to the selected graphical device, wherein the detail information is displayed on the same screen therewith.

43.(New) A graphical user display for providing real-time process information to a user for a process that is operable under control of one or more process variables, wherein one or more of the process variables has high and low process limit values associated therewith, the graphical user display comprising one or more graphical devices, wherein each of a plurality of the

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SAME

graphical devices correspond to a process variable, wherein at least one graphical device corresponding to a process variable comprises:

a gauge axis;

a first pair of high and low limit elements representative of engineering hard high and low limit values for the corresponding process variable and a second pair of high and low limit elements representative of operator set high and low limit values for the corresponding process variable, where the first and second pair of high and low limit elements are displayed on the gauge axis;

a graphical shape displayed along the gauge axis representative of a value of the corresponding process variable relative to the process limit values; and

a graphical symbol representative of an optimization characteristic for the corresponding process variable.

44.(New) The graphical user display of claim 43, wherein the graphical symbol is representative of a corresponding process variable to be maximized.

45.(New) The graphical user display of claim 43, wherein the graphical symbol is representative of a corresponding process variable to be minimized.

46.(New) The graphical user display of claim 43, wherein the graphical symbol is representative of a corresponding process variable which is to be held at a resting value.

47.(New) A computer implemented method for providing a graphical user display for providing real-time process information to a user for a process that is operable under control of one or more process variables, wherein one or more of the process variables has high and low process limit values associated therewith, wherein the method comprises displaying a plurality of graphical

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SAME

devices for corresponding process variables, wherein displaying at least one of the graphical devices comprises:

displaying a gauge axis;

displaying a first pair of high and low limit elements representative of engineering hard high and low limit values for the corresponding process variable and a second pair of high and low elements representative of operator set high and low limit values for the corresponding process variable on the gauge axis;

displaying a graphical shape along the gauge axis representative of a value of the corresponding process variable relative to the high and low process limit values; and

displaying a graphical symbol representative of an optimization characteristic for the corresponding process variable along the gauge axis.

48.(New) The method of claim 47, wherein the graphical symbol is representative of a corresponding process variable to be maximized.

49.(New) The method of claim 47, wherein the graphical symbol is representative of a corresponding process variable to be minimized.

50.(New) The method of claim 47, wherein the graphical symbol is representative of a corresponding process variable which is to be held at a resting value.

51.(New) A computer implemented method for providing a graphical user display for providing real-time process information to a user for a continuous multivariable process being performed at a process plant, wherein the continuous multivariable process is operable under control of at least manipulated variables and controlled variables, wherein one or more of the manipulated variables and controlled variables has high and low process limit values associated therewith,





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wherein the method comprises displaying a matrix display having the manipulated variables displayed along a first axis thereof and the controlled variables displayed along a second axis thereof, and further wherein the method comprises displaying a graphical device in proximity to each of the manipulated variables and controlled variables, wherein displaying the graphical device comprises:

displaying a gauge axis;

displaying a first pair of high and low limit elements representative of engineering hard high and low limit values for the corresponding process variable and a second pair of high and low elements representative of operator set high and low limit values for the corresponding process variable on the gauge axis; and displaying a graphical shape along the gauge axis representative of a value of the corresponding process variable relative to the high and low process limit values.